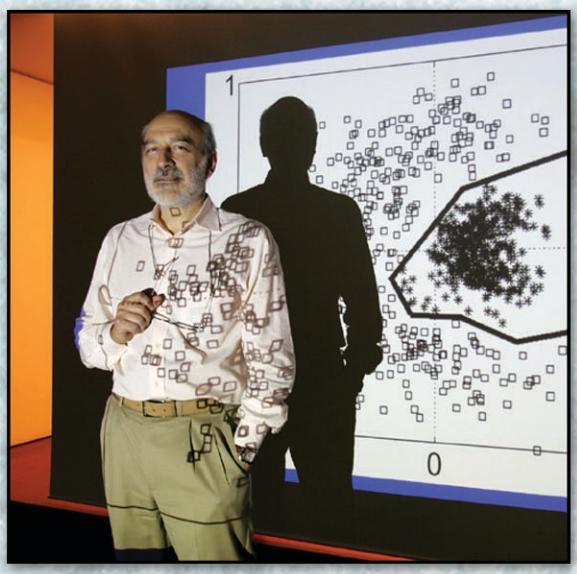
All Employees are Invited!

Signal and Imaging Sciences Workshop

KEYNOTE SPEAKER

Lawrence Livermore National Laboratory

Building 482 Auditorium
Thursday, November 20, 2008 at 9:00 a.m.



Dr. Jose C. Principe

Distinguished Professor of Electrical Engineering
University of Florida

We are pleased to have Dr. Jose Principe from the University of Florida as our keynote speaker this year. His talk will be of interest to all who attempt to optimally extract signals from random noise when the number of samples are limited. Dr. Principe's techniques can be very useful in non-Gaussian signal processing, especially in impulsive noise environments.

Information Theoretic Signal Processing

This talk describes our efforts to go beyond the second order moment assumption still prevalent in optimal signal processing. We show how the second norm of the PDF can be estimated directly from data avoiding an explicit PDF estimation step. The link between PDF moments, information theory and Reproducing Kernel Hilbert spaces will be established. Applications to adaptive systems with entropic cost functions will be demonstrated. A generalized correlation function called correntopy will be defined and its applications in signal processing will be outlined. Correntopy leads to new measures of similarity, to a new definition of dependence subspaces and to new tests for causality.

Jose C. Principe (M'83-SM'90-F'00) is a Distinguished Professor of Electrical and Computer Engineering and Biomedical Engineering at the University of Florida where he teaches advanced signal processing, machine learning and artificial neural networks (ANNs) modeling. He is BellSouth Professor and the Founder and Director of the University of Florida Computational NeuroEngineering Laboratory (CNEL) *www.cnel.ufl.edu*. His primary area of interest is processing of time varying signals with adaptive neural models. The CNEL Lab has been studying signal and pattern recognition principles based on information theoretic criteria (entropy and mutual information). Dr. Principe has more than 400 publications. He directed 62 Ph.D. dissertations and 65 Master theses. He wrote an interactive electronic book entitled "Neural and Adaptive Systems: Fundamentals Through Simulation" published by John Wiley and Sons and more recently co-authored a book on Brain Machine Interfaces.

Go to Casis website: (http://CASIS.llnl.gov/) for more info and to download an electronic copy of the registration form.

For registration and general information:
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For technical information:
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There is no registration fee for CASIS, however we request $20 ($10 per day) for hospitality and lunch.

Lawrence Livermore National Laboratory is operated by Lawrence Livermore National Security, LLC, for the U.S. Department of Energy, National Nuclear Security Administration under Contract DE-AC52-07NA27344.

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ENG-08-0073-AD